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wafer 5, on the upper side of which flip chips 6 are presented close together in rows with their connection side <sup>facing</sup> upward, <sup>upward</sup> ~~upward~~.

- 5 The gripper 4, located in the lower turning position, is directed at one of the flip chips 6 and can be telescopically lowered onto it. <sup>The</sup> ~~said~~ flip chip is sucked onto the end of the gripper and lifted together with the latter off the wafer 5. By moving the
- 10 placement head 1 and turning the rotor 3, all the grippers 4 can be successively loaded with the flip chips 6. One of the holding stations of the grippers <sup>which is shown as gripper 4a</sup> ~~4~~ is assigned a first holder 7, which is aligned by its end with the end of the gripper 4a,
- 15 The flip chip 6 sucked onto the gripper <sup>4a</sup> can then be transferred to the holder 7 and sucked onto the end of the latter. By pivoting <sup>the holder 7</sup> into a transfer position, represented by dash-dotted lines, the flip chip 6 can
- 20 be transferred to a further <sup>a second</sup> holder <sup>7a</sup> ~~7~~ which is directed oppositely facing the first holder and which then takes up the flip chip 6 on its connection side <sup>or gripper 4a</sup> ~~7~~. The second holder <sup>7a</sup> ~~7~~ is assigned to a downstream holding station of the placement head 1 <sup>which has gripper 4b</sup> ~~1~~. It can be pivoted out of the
- 25 transfer position into a delivery position, which is in line with the gripper 4 <sup>of the second holding station</sup> and in which the gripper 4 <sup>receives the component on its upper side, facing away from the connection side.</sup>
- 30 In figure 3 it is shown how the flip chip 6 can be transferred between the holders <sup>7 and 7a</sup> ~~7~~ and turned in a time-saving manner during the rotation of the rotor 3.

- After the turning of the flip chips 6, they are
- 35 successively transported into a placement position, represented in figure 2, in which they can be placed in the correct position onto a substrate <sup>or base</sup> ~~8~~ to be provided with placed components.

*I claim*  
~~Patent claims~~

1. A device for placing flip chips (6) on a substrate (8) in the form of a leadframe, the device having a movable placement head (1), which picks up the flip chips (6) from a stock of components (for example 5) and places them on the substrate (8), characterized in that the placement head (1) is provided with a turning device (9) for the flip chips (6), in that the placement head (1) is provided with a multiplicity of grippers (4) circulating in a turret-like indexed manner, in that the turning device (9) is assigned to a stationary part (for example 2) of the placement head (1), in that the turning device (9) respectively takes over one of the flip chips (6) in a first holding station of the grippers (4) and returns it, after turning, to one of the grippers (4) in one of the downstream holding stations.
2. The device as claimed in claim 1, characterized in that the turning device (9) has two pivotable holders (7), one of which can be aligned with the first of the holding stations, in that the second holder (7) can be aligned with a downstream one of the holding stations and in that the two holders (7) can be pivoted into a mutual transfer position, in which their ends, carrying the flip chip (6) and projecting toward each other, are aligned with each other.
3. The device as claimed in claim 2, characterized in that the holders (7) are designed as pivotably mounted suction pipettes, in that the grippers (4) are designed as suction grippers protruding radially from the placement head (1),

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Abstract *of the Disclosure*

~~Device for placing flip chips on a substrate~~

A freely positionable placement head ~~is~~ removes presented flip chips ~~from~~ from a wafer ~~with~~<sup>w. 7/8</sup> the connection side of said chips being directed upward. The placement head has a turning device ~~in~~, in which, by the time they are placed onto a substrate ~~to~~ to be provided with placed components, the flip chips are turned in such a way that they can be placed with their connection side onto the substrate. ↗

This makes it possible to dispense with a complex turning device assigned to the wafer ~~to~~.

~~Figure 1~~

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